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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,234	02/14/2001	Shozo Nagano	30-5000-(4015) Div1	3215

7590 12/17/2002

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EXAMINER

IP, SIKYIN

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 12/17/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

Applicant(s)

Examiner

Group Art Unit

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 8/20/02; 9/27/02
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 60-22 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 60-22 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). LS
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
2. Claim 67 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification as originally filed discloses “uniformly distributed fine precipitates” (page 11, lines 16-19, for example) but fails to define what are the standards or measurements of the “uniformly” and “fine”.
3. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 67 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 67 is indefinite because of the wording “as”. It is unclear whether the limitation(s) following the phrase are part of the claimed invention or not, and the resulting claim does not clearly set forth the metes and bounds of the patent

protection desired. Ex parte Koch, 66 USPQ 490 and Ex parte Steigerwald, 131 USPQ 74.

Claim Rejections - 35 USC § 103

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 60-62, 65, and 67-72 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5590389 to Dunlop et al.

9. The Dunlop disclose(s) the features including the claimed Cu based target material and grain size (col. 3, line 65 to col. 4, line 9 and lines 22-25; and col. 5, line 66 to col. 6, line 2), and second phase/precipitate (col. 2, lines 18-26). The difference between the reference(s) and the claims are as follows: Dunlop does not disclose purity of the Cu element, electromigration resistance, and thermal stability as recited in instant claims 70-71. However, using high purity elemental Cu for

sputtering target material is known in art of cited reference. The instant Cu based sputtering target material is overlapped by the cited reference; consequently, the electromigration resistance and thermal stability properties as recited in the instant claims would have been inherently possessed by the teachings of the cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product.

In re Best, 195 USPQ, 430 and MPEP 2112.01.

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, *In re Best*, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.’ *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).”

10. Claims 63-64, and 66 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 5590389 to Dunlop et al in view of USP 4786469 to Weber et al.

11. The Dunlop reference(s) disclose(s) the features including the claimed sputtering target with ultra-fine grains. The features relied upon described above can

be found in the Dunlop reference(s) at col. 1, lines 21-25 and lines 45-59; and col. 4, lines 10-27. The difference between the reference(s) and the claims are as follows: Dunlop does not explicitly disclose the claimed Cu based alloy containing Sr, Ba, and Se elements. However, Weber in the abstract and col. 3, lines 21-34 disclose(s) alloying elements that would refine Cu alloy grain size in the same field of endeavor or the analogous metallurgical art. Therefore, combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. It has been held that combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. In re Castner, 186 USPQ 213 (217) and In re Raner, 134 USPQ 343 (CCPA 1962).

Response to Arguments

12. Applicant's arguments filed September 27, 2002 have been fully considered but they are not persuasive.

13. Applicants' argument in paragraph bridging pages 5-6 of the instant remarks is noted. But, Dunlop teaches sputtering target body could be selected from Cu and its alloy (col. 3, lines 65-67). The alloying element Sc could be selected from among other elements (col. 4, lines 1-3). The grain for Cu based alloy is less than about 30 μm (col. 4, lines 5-6). The amount of the alloying elements is up to 10 wt.% (col. 4,

line 22). The listing of numerous solutions (here alloying elements) to a problem does not make any one solution less obvious. *Ex parte Raychem Corp.* 17 USPQ 2d 1417, 1424 (BPAI 1990) and *Merck & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (CAFC 1983). Moreover, one of ordinary skill artisan would have been led to select the claimed elements, motivated by a reasonable expectation of successfully achieving cited references' objectives. The disclosed genus would have rendered the species prima facie obvious. *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990); *Merck & Co., Inc. v. Biocraft Laboratories, Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir 1989); and *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

14. Applicants argue that grain refining elements of Weber require Ti and/or Zr. But, instant claim 60 has open transitional expression "comprising" which is inclusive and fails to exclude unrecited ingredients even in major amounts. See *Ex parte Davis et al.* (POBA 1948) 80 USPQ 448 and *In re Bertsch* 132 F2d 1014, 56 USPQ 379 (CCPA 1942).

15. Applicants argue that Weber does not teach Cu based sputtering target. But, Weber teaches to refine Cu based alloys grains (see abstract) which would benefit the ultrafine grain sputtering target materials of Dunlop (col. 1, lines 45-59). It has been held that combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm

of performance of ordinary skill artisan. In re Castner, 186 USPQ 213 (217) and In re Raner, 134 USPQ 343 (CCPA 1962).

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The above rejection relies on the reference(s) for all the teachings expressed in the text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combination of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See MPEP § 2163.06 (a) and 37 C.F.R. § 1.119.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542.

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The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone number for this Art Unit 1742 are (703) 305-3601 (Official Paper only) and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip

December 15, 2002